

CLAIMS

1. A method of classifying an object, comprising steps of:
measuring, among one or more samples of the object, values of a plurality of variables
associated with the object;
5 selecting one or more of the plurality of variables by which the object may be
identified; and
representing the object by the one or more variables.
2. The method according to claim 1, wherein the step of selecting includes selecting the
one or more variables on the basis of a difference between values of the variables and values
of variables of another object.
3. The method according to claim 1, wherein the step of selecting further comprises
steps of:
15 comparing the values of the plurality of variables with values of a plurality of
variables associated with another object; and
selecting the one or more of the variables by which the object may be identified in
response to the comparing step.
- 20 4. The method of claim 3, wherein the object is a tissue, and the step of measuring
comprises microarray expression phenotyping the tissue.
5. The method according to claim 1, wherein the step of selecting comprises
calculating mean values of variables among variables of two groups;
25 comparing the mean values; and
selecting the one or more of the variables by which the object may be identified in
response to the comparing step.
6. The method according to claim 5, wherein the step of selecting further comprises
30 ordering the variables according to the calculated mean values.
7. The method according to claim 6, wherein the step of ordering comprises normalizing
values of the variables to a predetermined range.

09977054-101201
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8. A method of classifying an object, comprising steps of:
calculating a rank order associated with index set values (TRANK);
calculating a second rank order associated with the difference of index and contrasting
set values (DIFFTRAN);
5 calculating index set means (ALLTMEAN); and
comparing to previously indexed objects.
9. The method according to claim 8, further comprising:
displaying, to a user, a visual indication of a relationship described by the rank orders.
10. The method according to claim 9, wherein the visual indication is a ternary plot.
11. A computer-readable medium encoded with a program that, when executed on a
computer system, performs a method for modeling an object, the method comprising steps of:
15 measuring, among one or more samples of the object, a plurality of variables
associated with the object;
selecting one or more of the plurality of variable by which the object may be
identified; and
representing the object by the one or more variables.
- 20 12. A method of characterizing data sets containing multiple variables, steps comprising:
statistically determining a subset of the variables to describe a difference between the
data sets; and
in a first set of data, ranking each of the variables in the subset of variables according
25 to its numerical value in the first set of data; and
calculating a difference for each of the variables in the subset of variables between the
first set of data and a second set of data; and
ranking each of the variables in the subset of the variables according to the difference
for each of the variables in the subset of variables.
30 displaying the subset of variables of the first set of data according the rankings of
each variable of the subset.
13. A method for rendering, to a user, a computer interface, the method comprising steps

of:

obtaining a set of variables associated with an object;
reducing the set of variables to a subset of variables, which are associated with the
object by a predetermined parameter;

- 5 ranking each of the variables in the subset of variables according to their numerical
value; and
applying a computer interface associated with a human sense.

14. The method of claim 13, wherein the human sense is hearing.

15. The method of claim 14, wherein the human sense is vision.

16. The method of claim 15, wherein the human sense is touching.

15 17. A computer-readable medium encoded with a program that, when executed on a
computer, performs a method for rendering an interface through which a user may interact,
the method comprising steps of:

obtaining a set of variables associated with an object;
reducing the set of variables to a subset of variables, which are associated with the
20 object by a predetermined parameter;

ranking each of the variables in the subset of variables according to their numerical
value; and
providing a visual representation of the variables.

25 18. A method for classifying an object, comprising steps of:
obtaining a set of variables associated with an object;
ranking each of the variables according to their numerical value; and
providing an human interface through which a user may interact.

30 19. A method of classifying an unknown tissue, comprising steps of:
measuring values of each variable of a set of variables for an index group of tissues
and a contrast group of tissues,

calculating mean value and differences of mean value for each variable of the set of variables from the index group of tissues and the contrast group of tissues,

ranking the means and differences of the means between the index and the contrast groups,

determining values of each variable in the set of variables in an unknown tissue, and
comparing the measured values in the unknown tissue to rank orders selected from the group of ranked means of the index group, ranked means of the contrast group, and differences of the means between the index and the contrast groups.

20. The method according to claim 19, further comprising:
displaying to a user a visual indication of a relationship described by the comparison of the measured values of variables in the unknown tissue and the rank orders of the index and contrast groups.

21. The method according to claim 20, further comprising the step of coding symbols based on the positive or negative values of the means and the differences of the means.

22. The method according to claim 20, wherein the visual indication is a ternary plot.

23. The method according to claim 19, wherein the variables are genes and the values are levels of gene expression.

24. The method according to claim 23, wherein the values are expressed as log of gene expression.